surface to be protected, nor are they electrostatically charged to provide some physical bonding; and they are intended to be present and available for repeated application of light activation as new microbes appear on the scene. Curry et al. generally describes a method using an aerosol or fog to deposit particles containing photosensitizers on a surface then to immediately irradiate with UV light, i.e. high energy light, which, as Curry states, is generally used to disinfect but often is not very efficient To provide some attraction between the sprays/aerosols and the surfaces to be treated, they apply an electrostatic charge to the particles as these are released. In truth then the surfaces are not imparted with antimicrobial properties as much as they are disinfected by the use of photosensitizer formulation applied to the surfaces, or possibly in the language of Curry, removal of chemical and/or biological contamination. (See abstract and numerous references throughout Curry et al.) The UV light taught by Curry et al. can not be stretched to teach activation of the photosensitizer by an environmental condition as taught in the present invention.

In preferred embodiments, the present invention calls for bonding the photosensitizer to the surface to be protected. This way it can be used over time in conjunction with environmental stimulus of anti microbial activity periodically. Once a chemist knows the surface to be protected and the photosensitizer to be used, it would generally not take undue experimentation to decide what would be the best way to bond the photosensitizer formulation to the surface. There is extensive science on the bonding of pendant acid, hydroxyl, or amino groups to cellulosic, plastic or elastomeric substrates, especially since we are not looking necessarily for optimum bonding. For example, a paper substrate would generally present a cellulosic surface or if modified some known organic outer surface. Choosing a porphyrin derivative structure for the photosensitizer which could be bonded (linked) to the paper substrate would be straightforward for a chemist skilled in the art to choose.

As to the targeting language, we beg to differ as to this not being understood by those skilled in the art. Various anti-bodies, gram-negative bacteria sensitive species, etc. are now known. Given a specific bacteria or class of bacteria or other microbes from which a surface needs to be protected from the art can suggest good examples of materials, e.g. haptens sensitive to harmful bacteria, which should be attached to selected photosensitizers to get a composition useful to practice the present invention. (See e.g. US 6,416,785 also owned by the assignee of this

invention) To make this clearer, the language in claims 7, 10 and 14 was modified to indicate preselection of microbes against which protection is desired.

Since prior art including Curry et al. deal essentially with using photosensitizers requiring activation using UV light, claims 1 and 9 have been amended to more specifically identify that the environmental condition needed to activate the photosensitizers of the present invention is not UV light. Claim 6 has been simplified to indicate this preferred embodiment uses a photosensitizer bonded to the surface with a photocleavable bond. Lastly, the Curry et al. reference deals primarily with materials as its invention, while claims 1-8 deal with a method of imparting antimicrobial properties to a material's surface. Thus even before any changes, Curry et al. could not anticipate the method claims of the present invention.

With these changes and remarks, it is believed that the disclosure is now in condition for allowance. Reconsideration is respectfully requested. An early and favorable response is earnestly solicited. Thank you.

Respectfully submitted,

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Marked-Up Set

What is claimed is:

1.(amended) A method for imparting antimicrobial properties to a surface comprising:

a) selecting a photosensitizer capable of being activated by an environmental condition, other than ultraviolet light, under which said surface is required to exhibit antimicrobial activity;

b) preparing a photosensitizer containing formulation from said photosensitizer in a topically available form; [and]

c) applying said photosensitizer containing formulation to said surface; and

d) exposing said photosensitizer to said environmental condition.

2. The method of claim 1 wherein said environmental condition is ambient light.

3.(amended) The method of claim 1 wherein said environmental condition is a specific illumination source, within the visible or near infrared region of the electromagnetic spectrum.

4. The method of claim 1 wherein said topically available form is as a spray.

5. The method of claim 1 wherein said topically available form is a solution.

6.(amended) The method of claim 1 wherein said photosensitizer is bonded to said surface [by a linking mechanism], said [linking mechanism] bond being cleavable by singlet oxygen.

7.(amended) The method of claim 6 wherein said photosensitizer is preferentially modified to have a targeting molecule attached, said targeting molecule [designed] selected to target and be attractive to [problem] predetermined microbes.

8.(amended) The method of claim 6 wherein said surface bonded with said photosensitizer is exposed to short periods of said environmental condition to release singlet oxygen and cleave said linking mechanism, followed by a period of no exposure to said environmental condition to allow microbes to contact or absorb said photosensitizer, and then long periods of said environmental condition to produce singlet oxygen to destroy said microbes.

9.(amended) A photosensitizer containing formulation for imparting antimicrobial properties to a surface comprising a photosensitizer, in a topically available form, capable

of being activated by environmental conditions, other than ultraviolet light, under which said surface is required to exhibit antimicrobial activity.

10.(amended) The photosensitizer containing formulation of claim 9, wherein said photosensitizer is preferentially modified to have a targeting molecule attached, said targeting molecule [designed] selected to target and be attractive to [problem] predetermined microbes.

11. A product having a surface coated with a photosensitizer containing formulation of claim 9, said surface having a removable protective layer that protects said photosensitizer from activation illumination and oxygen.

12. The product of claim 11 wherein said removable protective layer is selected from the group consisting of metal foil, plastic film and paper sheeting.

13. A product having a multitude of layers, where each of said layers is comprised of a sheet having an upper surface coated with a photosensitizer containing formulation, each of said sheets protecting an upper surface on a next lower sheet, from activation illumination and oxygen.

14.(amended) The product of claim 13 wherein said photosensitizer is preferentially modified to have a targeting molecule attached, said targeting molecule [designed] selected to target and be attractive to [problem] predetermined microbes.